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(71) Applicant: Nippon Denki Ido Tsushin KK
(72) Inventor: Taku Jiyoa
(54) Title of the invention: CATV charging system
(57) Abstract:
Problem to be solved: To display lots of kinds of charging information on request of the user by suppressing the entire system cost.
Solution: A management use personal computer 1 sends a polling signal to a terminal equipment of each guest room by an information channel unit 3 and receives a reply signal representing a request of the user. Then an idle state in an information channel unit 3 and plural video channel units 4 is selected and various information or video games requested by the user are sent. A charging personal computer 2 receives an instruction of the management personal computer 1 to execute the charging processing of each guest room concentratingly and stores charging information. When the user selects a pay video game, the charging personal computer 1 allows the charging personal computer 2 to start charging processing and allows the charging personal computer 2 to interrupt the charging processing when the user requests charging

information to read and send the stored charging information.

[Claims]

[Claim 1] A CATV accounting system which displays accounting information of charged video on a TV picture by the side of a terminal according to a user's demand, including an accounting means by which the center side which sends out the mentioned above charged video concentrates, processes and stores accounting information of the mentioned above charged video, an accounting information delivery means which reads the mentioned above accounting information which this accounting means has stored and is sent out to the mentioned above terminal side.

[Claim 2] The CATV accounting system according to claim 1 including a plurality of video channel units with which the mentioned above accounting information delivery means can transmit a picture signal of the mentioned above charged video and can transmit the mentioned above accounting information as a character image signal, a management use personal computer which selects one with idle status of a plurality of these video channel units and in which the mentioned above charged video image signal or the mentioned above character image signal is sent out.

[Detailed description of the invention]

[0001]

[Field of the invention] In CATV in the hotel which provides charged video, especially, this invention relates to the CATV accounting system which displays a charging situation on a TV picture according to a user's demand about a CATV accounting system.

[0002]

[Description of the prior art] As a means to inform conventionally the charging situation of CATV which is viewed according to a user's demand, for example, as indicated by JP 63-177673 A, when accounting is performed within each terminal unit, respectively, accounting information is stored in the memory in each device and a user demands accounting information, accounting information is read from the memory in a terminal unit and it is considered as a character image signal and is displaying on the screen of a television receiver.

[0003]

[Problems to be solved by the invention] The memory which remembers by a conventional example that accounting information mentioned above in each terminal unit and the character image generation part and television modulator for making accounting information into a character image signal and displaying on a TV picture are formed, respectively. For this reason, as each the mentioned above circuit for supply charging information must be established in each terminal unit of many rooms, respectively when applying to the CATV system in a

hotel, it has the problem of becoming of a high cost as the whole system.

[0004] As it is diversified with a video game, karaoke, characters (Japanese, English and the like) and the like, the information which serves as multimedia age and CATV provides is difficult to correspond in the conventional terminal unit.

[0005] The purpose of this invention is to reduce the cost of the whole system and to provide the CATV accounting system which can display various accounting information according to a user's demand.

[0006]

[Means for solving the problem] A CATV accounting system of this invention concentrates and performs accounting by the center side of CATV and sends out accounting information to the terminal side according to a user's demand. A function which can send out accounting information to a plurality of video channel units that transmit a video signal as a character image signal is provided.

[0007] Specifically, a CATV accounting system which displays accounting information of charged video on a TV picture by the side of a terminal according to a user's demand is provided with an accounting means by which the center side which sends out the mentioned above charged video concentrates, processes and stores accounting information of the mentioned above charged video, an accounting information delivery means which reads the mentioned above accounting information which this accounting means has stored and is sent out to the mentioned above terminal side.

The mentioned above accounting information delivery means is provided with a plurality of video channel units in which a picture signal of the mentioned above charged video can be transmitted and can transmit the mentioned above accounting information as a character image signal. A management use personal computer which selects one with idle status of a plurality of these video channel units and in which the mentioned above charged video image signal or the mentioned above character image signal is sent out.

[0008]

[Embodiment of the invention] Next, this invention is explained with reference to drawings.

[0009] Drawing 1, drawing 2 are the block diagrams showing one embodiment of this invention and show the CATV system which provides a charged video game and accounting information from the CATV center in each room of a hotel. Here, drawing 1 shows the composition by the side of a center and drawing 2 shows the composition by the side of each guest room.

[0010] The management use personal computer 1 which controls the whole system in the center side as shown on drawing 1, the charging personal computer 2 which bundles up the accounting of each guest room and performs it, the information channel unit 3 which performs communication with the terminal unit of each guest room with polling and a plurality of video channel units 4 which generate a game image signal are formed.

And it is connected with each unit by the multi communication interface 5 and the management use personal computer 1 is connected with the charging personal computer 2 by LAN.

[0011] On the other hand, as shown on drawing 2, the television receiver 6, the terminal unit 7 and the remote control transmitter 8 are installed in each guest room side, respectively. By operating the remote control transmitter 8, various directions and demands can be sent out to a center from the terminal unit 7.

[0012] Now, in drawing 1, the management use personal computer 1 sends out a polling signal to the terminal unit 7 of each guest room by the information channel unit 3 and receives the reply signal which shows a user's demand. And different information, a video game and the like that a user demands are transmitted by the information channel unit 3 and the video channel unit 4.

[0013] The charging personal computer 2 totals and stores accounting information, such as a guest room number, time, a hour of use and a fee, in response to directions of the management use personal computer 1. That is, when a user chooses a charged video game, accounting is started in response to directions of the management use personal computer 1. When a user demands accounting information, accounting is interrupted in response to directions of the management use personal computer 1, the accounting information currently recorded is read and it sends out to the management use personal computer 1.

[0014] CPU 31 of the information channel unit 3 is controlled by the management use personal computer 1, polls to the terminal unit 7 of each guest room, receives a reply signal and sends it out to the management use personal computer 1. Namely, CPU 31 generates the polling signal transmitted to each terminal unit and sends it out by the modem 36 and the mixing distributor 37. It receives by the mixing distributor 37 and the modem 36 and the reply signal from a terminal unit is sent out to the management use personal computer 1.

[0015] When it sends out information to a terminal unit, CPU 31 receives information from the management use personal computer 1, considers it as the character image signal of a predetermined channel by the character image generation part 32 and the television modulation part 33 and transmits by the mixing distributor 37. In this case, CPU 31 controls PLL 34 according to specification of the management use personal computer 1 and sets the frequency of a polling signal and a character image signal as specification frequency and it notifies using frequency to a terminal unit.

[0016] A plurality of video channel units 4 are formed according to the number of channels of a circuit, are chosen and operated with the management use personal computer 1. That is, when the demand of a video game is received from a user, the management use personal computer 1 selects the video channel unit 4 of idle status and loads a video game program to the video game part 40 of the selected video channel unit.

[0017] The selected video game part 40 generates a game image signal and transmits to the terminal unit of a guest room by the changeover switch 49, the television modulation part 43 and the mixing distributor 48. In this case, switchover control of CPU 41 is carried out, so that the changeover switch 49 may choose a game image signal.

[0018] This game image signal is displayed on the screen of the television receiver 6 by the terminal unit 7 shown on drawing 2. And when a user operates the remote control transmitter 8, looking at the game screen of the television receiver 6, the remote control signal of game operation from terminal unit 7 is send out to center. The mixing distributor 48 of the selected video channel unit 4 by the side of the center shown on drawing 1 dissociates and this remote control signal is inputted into the video game part 40 by the remote control signal demodulation part 47 and the remote control decoder 46. The video game part 40 operates according to a remote control signal and outputs a game image signal. Thus, the user can operate the remote control transmitter 8 and can enjoy a video game.

[0019] Also, each of a plurality of video channel units 4 have the character image generation part 42 and the changeover switch 49, respectively and can transmit a video game or text now. The changeover switch 49 is controlled by CPU 41 and chooses either one of a game image signal and a character image signal. When the demands of accounting information occur frequently by doing in this way, as an offer of information can be carried out using the video channel unit 4 of idle status, it

is efficient. In this case, after choosing the video channel unit 4 of idle status and making the frequency number of the selected video channel unit notify to the terminal unit 7, the management use personal computer 1 reads the accounting information which the charging personal computer 2 is recording and is sent out.

[0020] Next, the terminal unit 7 by the side of a guest room is explained.

[0021] In drawing 2, the mixing distributor 71 dissociates and the character image signal and game image signal which are sent out from the center side are supplied to the up and down converter 72 and are displayed on the screen of the television receiver 6.

[0022] By the way, when a user demands a video game and is trying to choose the remote control receiving part side (point of contact b), although switchover control of the changeover switch 77 was carried out by CPU 73 and the CPU side (point of contact a) is usually chosen.

[0023] The modem 76 receives the polling signal from the center which the mixing distributor 71 separated and sends it out to CPU 73 by the point of contact a of the changeover switch 77. The remote control receiving part 78 receives the remote control signal sent out from the remote control transmitter 8,and sends out to CPU 73 by the point of contact b of the changeover switch 77. When a polling signal is received, CPU 73 generates the reply signal according to the instruction request which a remote control signal shows and sends it out to a center by the point of contact a, the modem 76 and the mixing distributor 71 of the changeover switch 77. CPU 31 controls PLL 34 in the frequency specified with the

management use personal computer 1 and enables communication with a center.

[0024] When a user operates the remote control transmitter 8 and demands a video game, CPU 73 sends out the remote control signal which requires a video game, when a polling signal is received. Next, when a game image signal is sent out from a center and a user starts a game start, the changeover switch 77 is changed to the point of contact b side and it indicates that charging LED 79 is turned on and it is under charging. In this state, the user can operate the remote control transmitter 8 and can enjoy a video game.

[0025] Also, CPU 73, the end of a video game or when the remote control signal which shows an accounting information demand is received, the changeover switch 77 is changed to the point-of-contact a side, when this remote control signal is sent out, a polling signal is received, charging LED 79 is switched off or blinked indicating that charging is stopped.

[0026] Next, after a user demands a video game, the operation instances of a remote control are explained about the case where accounting information is required.

[0027] If the pushing of the information requirements button of the remote control transmitter 8 is carried out, notice information as shown, for example in drawing 3 (a) will be displayed on the screen of a television receiver. Here, if «1. Charged channel guide» is chosen, the explanation about charged video will be displayed on a screen.

[0028] If the pushing of the menu button of the remote control transmitter 8 is carried out for several seconds, a menu as shown, for example in drawing 3 (b) will be displayed on a television receiver. Here, if «1. Game title» is chosen, the title of a video game will be displayed. Here, if the title of the desired video game is chosen, a game image will be displayed on a television receiver. Next, a video game can be enjoyed by operating the button of the remote control transmitter 8, looking at a TV picture.

[0029] When requiring accounting information, accounting information as shown, for example in drawing 3 (c) is displayed on a television receiver by pushing the menu button of the remote control transmitter 8 for several seconds and choosing «6. Accounting information», after displaying on a television receiver the menu screen shown on drawing 3 (b). Here, if the pushing of the «C» button is carried out, it will return to the menu screen shown on drawing 3 (b). If «7. Return» of a menu screen is chosen, it will become a screen of the notice information shown on drawing 3 (a).

[0030]

[Effect of the invention] As explained above, according to this invention, concentrate on the center side of CATV and processing about charging is performed, by selecting the unit of the idle status of a plurality of video channel units which can transmit the picture signal of charged video and the character image signal of accounting information and transmitting, it not only can respond to various accounting information, but as it is not necessary to provide a supply charging information function in a

terminal unit like before, the miniaturization and cost reduction of a terminal unit and cost reduction of a system are realizable.

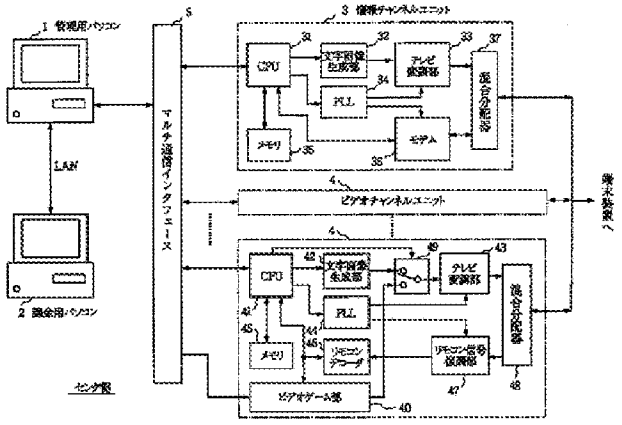
[Brief description of the drawings]

[Drawing 1] is a block diagram showing one embodiment and the composition by the side of a center is shown of this invention.
[Drawing 2] is a block diagram showing one embodiment and the composition by the side of a guest room is shown of this invention.
[Drawing 3] is a drawing showing an example of the TV picture at the time of a user demanding charged video and accounting information.

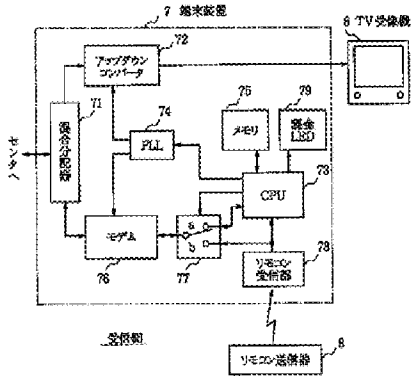
[Description of numerals]

1 Management use personal computer
2 The charging personal computer
3 Information channel unit
4 Video channel unit
6 Television receiver
7 Terminal unit
8 Remote control transmitter

Drawing 1



Drawing 2



Drawing 3